

REMARKS

The statement by the Examiner that claim 48 contains allowable subject matter is gratefully appreciated. Claim 38 has been amended to correct a typographical error. Claim 31 has been amended. Claims 31-65 are pending in this application. Applicants reserve the right to pursue the original claims and other claims in this and other applications.

Claim 31 stands objected to under 37 C.F.R. § 1.71. According to the Office Action, "securing a conductive layer to a backside" is used to mean the broader phrase "forming a conductive layer on a backside." Reconsideration is respectfully requested.

Applicants respectfully submit that the conductive layer, which may be e.g., a metallic layer or conductive paste, is secured to the backside of the substrate by an adhesive. (Specification page 9, line 15 to page 10, line 2). In an exemplary embodiment, the conductive layer (e.g., metallic layer) can be secured to the backside after the wafer has been cut into individual dies. (Specification page 10, lines 2-4). In another exemplary embodiment, the conductive layer (e.g., conductive paste) can be secured to the backside before the wafer has been cut into individual dies. (Specification page 12, lines 5-6). Accordingly, Applicants respectfully submit that the term "securing" is properly recited in claim 31. Claim 31 is believed to be in proper form. Applicants respectfully request that the objection be withdrawn and claim 31 allowed.

Claims 31-32, 42 and 62-65 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over (1) alleged admitted prior art (AAPA); (2) Burr (U.S. 6,218, 708); or (3) Wanlass (U.S. 5,422,507) in view of Trueblood (U.S. 4,293,587). The rejection is respectfully traversed.

In order to establish a *prima facie* case of obviousness “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” M.P.E.P. §2142. As indicated by the Examiner in the Office Action, the specification recites that “[i]t is known in the art to maintain a stable substrate bias voltage V_{bb} over a large area of the substrate by spacing the well plugs close together,” and that “[i]t is common to provide a substrate bias voltage V_{bb} via a plurality of well plugs, such as P-well plugs.” AAPA does not teach or suggest, however, the unique combination of claim elements recited in claim 31, including “fabricating a plurality of bias voltage distribution regions over said upper side of said substrate for receiving a bias voltage and applying said bias voltage to said substrate; and securing a conductive layer to a backside of said substrate.” The use of well plugs, such as P-well plugs, within a semiconductor substrate, described as prior art in the application, does not teach or suggest “fabricating a plurality of bias voltage distribution regions fabricated over said upper side of said substrate,” (emphasis added). As shown, the AAPA reference fails to disclose or suggest all of the limitations of claim 31.

Claim 31 recites, *inter alia*, “securing a conductive layer to a backside of said substrate.” As stated in the Office Action, the cited prior art references are explicitly silent about this limitation. Instead, according to the Office Action, the prior art references “imply a conductive layer by grounding symbols at the backside of die with bias voltage distribution regions in the transistors at the top.” (Office Action page 3, item 6). Applicants respectfully submit that the present invention relates to “a method ... for reducing bias voltage drops within a substrate.” (Specification page 1, lines 2-3). The invention provides a conductive layer, which may be e.g., a conductive metallic layer, a conductive paste, a conductive polymeric film, or a conductive metallic film, secured to a backside of a semiconductor substrate to help maintain a more uniform level of bias voltage within the substrate. (Specification page 2, lines 12-13 and page 3,

lines 2-3). More specifically, the conductive layer “provides a path for removing unwanted voltage or noise from the substrate to help maintain a uniform V_{bb} voltage throughout the substrate.” (Specification page 3, lines 2-5). None of the references cited, even when considered in combination, teach or suggest a conductive layer as described in this invention and of “securing a conductive layer to a backside of said substrate,” as recited in claim 31.

Absent this teaching, the cited combinations must fail to disclose, teach or suggest “securing a conductive layer to a backside of said substrate, wherein said conductive layer is an electrical layer being adapted to receive an electric charge related to unwanted voltages and electrical noise from a first region of said substrate and return an electric charge to a second different region of said substrate to maintain a uniform bias voltage throughout the substrate,” as recited by claim 31.

For at least the above reasons, the cited references do not render obvious the claimed invention, and withdrawal of the rejection is respectfully requested.

Claims 32, 42 and 62-65 depend from claim 31 and therefore contain each of the limitations recited by claim 31. Claims 32, 42 and 62-65 are similarly allowable for at least the reasons given for claim 31. Applicants respectfully request that the rejection of these claims be withdrawn and the claims allowed.

Claims 43-47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Hite (U.S. 5,103,283) taken with Davey et al. (U.S. 4,996,171). The rejection is respectfully traversed.

Claims 43-47 depend from claim 31 and therefore contain each of the limitations recited by claim 31. As set forth above, claim 31 recites “securing a conductive layer to a backside of said substrate, wherein said conductive layer is an

electrical layer being adapted to receive an electric charge related to unwanted voltages and electrical noise from a first region of said substrate and return an electric charge to a second different region of said substrate to maintain a uniform bias voltage throughout the substrate.” AAPA in view of Hite taken with Davey fails to disclose these limitations.

Additionally, AAPA fails to teach or suggest “fabricating a plurality of bias voltage distribution regions over said upper side of said substrate for receiving a bias voltage and applying said bias voltage to said substrate; and securing a conductive layer to a backside of said substrate,” as recited in claim 31. Nor is Hite or Davey cited for this limitation. Neither Hite nor Davey remedy the deficiency of AAPA. Therefore, claims 43-47, which depend from claim 31, are not obvious over the cited references. As such, claims 43-47 are patentable and Applicants respectfully request that the rejection of these claims be withdrawn.


Claim 48 stands objected to as being dependent upon a rejected base claim, but is otherwise allowable. The objection is respectfully traversed. Claim 48 depends from independent claim 31. Claim 31 is believed to be allowable. As such, claim 48 does not depend from a rejected base claim. Applicants respectfully request that the objection of this claim be withdrawn and claim 48 allowed.

With respect to the Election of Species Requirement issued on January 14, 2005, the Examiner has stated that claim 31 is generic and that “[u]pon allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form.” Applicants believe that claim 31 is in condition for allowance. Since claim 31 is a generic claim, Applicants respectfully submit that withdrawn claims 33-41 and 49-61 are also allowable.

In view of the above amendment, Applicants believe that the pending application is in condition for allowance.

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Respectfully submitted,

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